**Curriculum Expectations:**

E1.2 assess some of the social, economic, and environmental implications of the production of electrical energy in Canada from renewable and non‑renewable sources (e.g., wind, solar, hydro, coal, oil, natural gas, nuclear)

**Learning Goals:**

1. Students will see the economic aspects of production and use of electricity.

2. Students will learn about renewable and non-renewable sources of energy and their usage in production of electricity.

3. Students will explore opportunities to minimize environmental damage due to electricity production and usage and come up with solutions that can address some concerns regarding the usage of electricity.

4. Students will also be able see the political connection associated with production and usage of electricity.

**Introductory Video:**

http://www.youtube.com/watch?v=2Ziv0RbKlWc&feature=related

Prices of Electricity are important to all the people using electricity. The sources from which the electricity is produced is from wind, nuclear, natural gas and moving water.

http://kids.everykilowattcounts.com/en/what-is-electricity/the-in-and-outs-of-making-electricity.html

This site will allow students to read up on the sources of renewable and non-renewable energy.

**Electricity and Environment:**

Electricity is very important for us as it is fundamental to our existence. Our day to day activities are possible only because of electricity. Electricity is generated from fossil fuels, oil, gas, moving water. In Ontario, electricity is generated from nuclear, thermal and hydroelectric stations. There are costs to environment when we produce electricity. Generation of electricity from non-renewable resources causes environment to lose its pool of resources and this is harmful to the environment and ecosystem. The emissions that occur during production of electricity include various pollutants and greenhouse gases. This is also detrimental to the environment and all living entities on the planet.

***What does this mean?***

We cannot function without electricity but we can always preserve and conserve what we have. For example, we can turn of lights and instrument when we are not using them. We can find out alternative sources for production of electricity such as renewable sources (wind energy). We learned about efficiency of an equipment and if we use equipment that has higher efficiency it consumes less electricity.

***What now?***

Let us all think about ways to reduce our use of electricity during the day. We can also participate in Earth Our and be responsible citizens. We are human beings and we all can make difference one step at a time. Let us think of ways to conserve electrical energy and save the environment.

***To Teacher:***

The above can be an introduction to a project on Renewable resources and production of electricity. Students can explore the STSE issues through research and present their findings in presentations to class. Students can also come up with solutions or suggestions on what can be done so that we have electricity yet we do not harm the environment. As Science students this topic will allow them to inquire and explore the issues around how certain scientific and technological advancements and usage affect the Environment and Society.

***Safety Concerns at Home with Electricity:***  
1. When resetting the circuit breakers at home or other electrical switches make sure to position yourself in safe location as the current passing through any circuit in your house can be up to 120V  
2.Never let any wiring come in contact with wet material as it can cause electric shock  
3. Do not use blow dryers near sink as there is a possibility of shock when the blow dryer comes in contact with water while you are using it.  
4. Make sure not to put fingers or stick anything into outlets as you may get shock by doing so.   
5. The amount of voltage running through the pole wires near your home is very high so be cautious.   
6. Do not plug in wet wires into the outlets at your home.  
7. Never remove the ground pin from the three pinned plug as it could lead to shock and  
"NEVER FORCE A PLUG INTO AN OUTLET IF IT DOESN'T FIT."  
8. Do not use appliances during storm.